4. Long-term exposure to hazardous chemicals: Residents believe there is a higher rate of cancer in the community due to long-term exposure to chemicals from the Georgia Pacific facility. Several also indicated suffering from some kind of respiratory condition. During a March 20, 2014, conference call with Pastor Bouie, there was questions about community exposure to hydrogen sulfide on a daily basis and the potential health impacts. Toxicology staff from Region 6 looked into this item and herein provides information regarding the potential harm from hydrogen sulfide exposure and the occurrence of hydrogen sulfide.

The Louisiana Environmental Action Network (LEAN) reported air concentrations from 1 to 25 parts per billion (ppb) downwind from the George Pacific facility using a Jerome Hydrogen Sulfide Monitor. The rotten egg smell of hydrogen sulfide would be perceptible at this range of air concentrations. The EPA chronic Reference Concentration (RfC) and the Agency for Toxic Substance and Disease Registry (ATSDR) acute-duration Minimum Risk Level (MRL) were used as comparison values. The range of hydrogen sulfide concentrations in the 1 to 25 ppb are below the acute-duration MRL (70 ppb) which indicates that harmful effects would not be anticipated from exposure up to 14 days; however, the range of hydrogen sulfide concentrations were above the chronic RfC (1.3 ppb) which indicates that long-term exposure (i.e., 70 years) could result in harmful effects. Without additional exposure information, the long-term health impacts from hydrogen sulfide cannot be evaluated.

Hydrogen sulfide gas occurs both naturally (e.g., swamps and stagnant water) and from human-made processes (e.g., pulp and paper mills). Hydrogen sulfide is a colorless gas with the characteristic odor of rotten eggs. People can smell hydrogen sulfide at low air levels (odor threshold of 0.5 ppb); however, at higher air levels, a person might lose the ability to smell it.

Hydrogen sulfide has not been shown to cause cancer in humans. The harm caused by hydrogen sulfide is evaluated due to its noncarcinogenic health effects. Brief exposures to high air levels (greater than 500,000 ppb) of hydrogen sulfide can cause a loss of consciousness. Lower air levels (2,000 ppb to 20,000 ppb) of hydrogen sulfide may cause irritation to the eyes, nose or throat, and headaches. Hydrogen sulfide may cause people with asthma to have difficulty breathing.

The EPA has inhalation Acute Exposure Guideline Levels (AEGLs) for hydrogen sulfide ranging from 750 ppb to 330 ppb with exposure-durations ranging from 10 minutes to 8 hours. Individuals exposed to hydrogen sulfide levels above the AEGL-1 described above could experience notable discomfort and irritation. The ATSDR has an acute-duration (1 to 14 days) MRL of 70 ppb. The chronic noncarcinogenic health effects of hydrogen sulfide are evaluated by comparison to an inhalation RfC of 1.3 ppb. The RfC of 1.3 ppb hydrogen sulfide is equivalent to the reported concentration of 2 micrograms/cubic meter ($\mu g/m^3$). The RfC is an air level that allows for continuous daily exposure for a lifetime (i.e., 70 years) without harm to sensitive individuals including children.